3GPP TSG RAN WG2 Meeting #117-e R2-220xxxx

**Electronic meeting, 21 Feb- 3 March, 2022**

**Agenda item:** 8.11.1

**Source:** CATT

**Title:** Report of [AT117-e][633][POS] Merged CR to 36.305 (CATT)

**Document for:**  Discussion and decision

# Introduction

This is the report of following offline discussion:

* [AT117-e][633][POS] Merged CR to 36.305 (CATT)

Scope: Merge the endorsed positioning CRs to 36.305.

Intended outcome: Agreeable CR

Deadline: Wednesday 2022-03-02 1000 UTC

# Annex: companies’ point of contact

|  |  |  |
| --- | --- | --- |
| **Company** | **Point of contact** | **Email address** |
| Nokia |  | mani.thyagarajan@nokia.com |
| Swift Navigation | Grant Hausler | grant@swiftnav.com |
| CATT | Jianxiang Li | lijianxiang@catt.cn |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Discussion

## Summary

### 3.1.1 GNSS integrity

**Merged endorsed CR**

R2-2203603 Running CR of 36.305 for GNSS Positioning Integrity InterDigital, Inc. draftCR Rel-17 36.305 16.4.0 B NR\_pos\_enh-Core

* Endorsed
* [AT117-e][603][POS] Integrity stage 2 CRs (InterDigital)

Scope: Review and update the following CRs:

* R2-2202861 (integrity introduction to 36.305)
* R2-2202862 (integrity introduction to 38.305)

Intended outcome: Endorsable CRs

Deadline: Friday 2022-02-25 1000 UTC

### 3.1.3 A-GNSS enhancements

**Merged endorsed CRs**

R2-2203610 Introduction of B2a and B3I signal in BDS system in A-GNSS CATT, CAICT, CMCC, China Telecom, China Unicom, Huawei, HiSilicon, Intel Corporation, ZTE Corporation, CBN, vivo, OPPO, Lenovo, MediaTek Inc, Spreadtrum Communications, Xiaomi. CR Rel-17 36.305 16.4.0

0106 1 B NR\_pos\_enh-Core R2-2109485

* Endorsed
* [AT117-e][601][POS] BDS running CRs (CATT)

Scope: Review the following CRs, collect comments, and update if necessary:

* R2-2202402 (BDS introduction to 37.355)
* R2-2202403 (BDS introduction to 36.305)
* R2-2202404 (BDS introduction to 38.305)

Intended outcome: Endorsable CRs and report in R2-2203612

Deadline: Friday 2022-02-25 1000 UTC

## 3.2 Comments on the merged CR

**Discussion point: Companies are invited to provide view on the merged version.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Company’s name** | **Section** | **Identified issues** | **Change suggestion** |
| Nokia | CR cover | Other specs must have the Y or N box ticked for Test and O&M specs also | Update the Other specs boxes. I assume A-GNSS usually have test spec impacts but no O&M spec impacts.  [Rapp]: Thanks and updated in v1. |
| Swift Navigation | 8.1.1a | *(Same comment as we provided in the [AT117-e][632][POS] discussion for TS 38.305):*  In Equation 8.1.1a we need to clarify that the error can exceed the bound for up to the TTA without being considered a violation. This is consistent with the existing descriptions in section 8.1.1a (i.e. the ‘grace period’) and the principles introduced in the SI (TR 38.387, Sections 9.1.1.3, 9.1.1.4). Note: this update does not change the current agreement that the group has made about *not* sending the AL and TTA KPIs in LPP, as Equation 8.1.1a-1 refers to the assistance data rather than the Integrity Request / Results. | For integrity operation, the network will ensure that:  *P(Error > Bound* for longer than TTA *| NOT DNU) <= Residual Risk + IRallocation* **(Equation 8.1.1a-1)**  …  where:  **Time-to-Alert (TTA):** The maximum allowable elapsed time from when the Error exceeds the Bound until a DNU flag must be issued.  [Rapp]: Thanks and updated in v1. |
|  | 8.1.1a | *(Same comment as we provided in the [AT117-e][632][POS] discussion for TS 38.305):*  Update Stage 2 following the agreements that have been made in the LPP Running CR regarding the RealTimeIntegrity IE and DNU=FALSE condition. | Equation 8.1.1a-1 holds at any epochs for which Assistance Data is provided. Providing Assistance Data without the Integrity Service Alert IE or Real Time Integrity IEs is interpreted as a DNU=FALSE condition. For any bound that is still valid (within its validity time), the network ensures that the Integrity Service Alert and/or Real Time Integrity IEs are also included in the provided Assistance Data if needed to satisfy the condition in Equation 8.1.1a-1. It is up to the implementation how to handle epochs for which integrity results are desired but there are no DNU flag(s) available, e.g. the Time To Alert (TTA) may be set such that there is a “grace period” to receive the next set of DNU flags.  Only those satellites for which the GNSS integrity assistance data are provided are monitored by the network and can be used for integrity related applications.  [Rapp]: Thanks and updated in v1. |
|  | 8.1.2.1.8 | *(Same comment as we provided in the [AT117-e][632][POS] discussion for TS 38.305):*  Update Stage 2 following the agreements that have been made in the LPP Running CR regarding the RealTimeIntegrity IE and DNU=FALSE condition. | For integrity purposes (as per Clause 8.1.1a), a GNSS satellite and signal combination should be considered as being marked “Do Not Use” (DNU) if the satellite ID and signal are present in the list of unhealthy (bad) signals.  NOTE: The absence of the Real Time Integrity assistance from any Provide Assistance Data message is interpreted as DNU=FALSE for all satellites and signals that are monitored for integrity.  [Rapp]: Thanks and updated in v1. |
|  |  |  |  |

# Summary report and proposals

TBD